

CLAIMS (29648)

What is claimed is:

- 2-28A27
1. A method of multipath combining, comprising:
 - (a) forming at least one matrix of covariances of multipath inputs;
 - (b) finding an eigenvector of said matrix; and
 - (c) combining said multipath inputs relatively weighted according to the components of said eigenvector.
 2. The method of claim 1, wherein:
 - (a) said eigenvector is associated with a maximal eigenvalue of said matrix.
 3. The method of claim 1, wherein:
 - (a) said weightings have magnitudes proportional to the squared magnitudes of said eigenvector components and have phases proportional to the phases of said eigenvector phases.
 4. A method of multipath combining, comprising:
 - (a) forming a first matrix of covariances of multipath inputs over a first range and a second matrix of covariances of multipath inputs over a second range;
 - (b) forming an estimation matrix from said first and second matrices;
 - (c) finding an eigenvector of said estimation matrix; and
 - (c) combining said multipath inputs relatively weighted according to the components of said eigenvector.

5. The method of claim 4, wherein:

(a) said eigenvector is associated with a maximal eigenvalue of said estimation matrix.

6. The method of claim 4, wherein:

(a) said weightings have magnitudes proportional to the squared magnitudes of said eigenvector components and have phases proportional to the phases of said eigenvector phases.

7. The method of claim 4, further comprising:

(a) forming a second estimation matrix from said first and second matrices;

(b) finding a second eigenvector of said second estimation matrix; and

(c) wherein said combining said multipath inputs relatively weighted according to the components of said eigenvector includes relatively weighted also according to the components of said second eigenvector.

8. A multipath receiver, comprising:

(a) a plurality of detectors, each detector detecting a path of a multipath input;

(b) first circuitry coupled to said detectors and connected to form a first matrix of covariances of outputs of said detectors over a first range and a second matrix of covariances of outputs of said detectors over a second range;

(c) second circuitry coupled to said first circuitry and connected to form an estimation matrix from said first and second matrices;

(c) third circuitry coupled to said second circuitry and connected to find an eigenvector of said estimation matrix; and

(c) fourth circuitry coupled to said third circuitry and connected to combine

said outputs relatively weighted according to the components of said eigenvector.

9. The receiver of claim 8, wherein:

(a) said first, second, third, and fourth circuitry include a programmed processor.

TI-29648 Page 14